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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,207	07/01/2005	Dirk Weber	10191/4226	7657

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EXAMINER
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PIPALA, EDWARD J

ART UNIT	PAPER NUMBER
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3663

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/541,207	Applicant(s) WEBER ET AL.	
	Examiner Edward Pipala	Art Unit 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.  
2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 11-30 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 27 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office action is in response to Applicant's amendment and remarks filed 3/27/07. Claim 11 has been amended to further recite

Claims 14-16 have been canceled by amendment, new claims 31-33 have been added. Claims 11-13, and 17-33 are presently pending.

The previous rejections under 35 U.S.C 112 and 35 U.S.C 102 are withdrawn.

#### ***Drawings***

2. The drawings received on 3/27/07 have been approved by the Examiner, and the previous drawing objections have been withdrawn.

#### ***Specification***

3. The disclosure is objected to because of the following informalities: the specification does not contain a brief description of figure 3, as now labeled in the replacement drawing sheet. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-13 and 17-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kellum (U.S. Pub. 2004/0153244) in view of Rao et al. (U.S. Pub. 2004/0019420).

Kellum teaches applicant's invention essentially as claimed, except for having the object identification and classification system adapted to be coupled to a restraint system and capable of controlling the restraint system as a function of the classification and relative velocity of the object.

Rao et al. ('420) discloses a method for determining a danger zone for a pre-crash sensing system in a vehicle having a countermeasure system, in which an object's distance and relative velocity are used to activate a countermeasure system based on the object's distance, relative velocity and the object classification signal. Sections 0010 through 0013, under the heading of summary of the invention, further discuss an object sensor for generating an object distance signal, object relative velocity signal and an object classification signal and having a controller coupled to the object sensor for activating the countermeasure system in response to the object distance, relative velocity and classification signals.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the driver warning signal of Kellum in which object range, rate range and azimuth position of an object are used to control the restraint system of Rao et al., in a manner which has fewer false alarms for non-reversible countermeasures such as interior airbags vs. reversible activation of items such as activating motorized belt pre-tensioners or vehicle height adjustments (Rao '420 section 0005).

With respect to claims 11-13 and 33, in which a device and method for classifying at least one object with respect to its detected velocity and acceleration and their respective reference values as a characteristic of time, please see section 0002 of Kellum, which discloses a collision warning system (CWS) intended to mitigate and/or eliminate vehicle impacts by generating a timely warning to the driver to take an evasive action. Such a vehicle is configured with a sensor (or sensors) that is/are capable of detecting objects in the frontal area of the vehicle. The sensor not only detects the presence of an object, but also provides some quantitative information about the object such as range, range rate, and azimuth position of the object. Additional information related to the object (e.g., a lead vehicle in many instances) may include relative acceleration, the size of the object, the dimensions of the object, the direction of movement of the object, etc. The following section (0003) further discloses the use of a path prediction algorithm and a threat assessment algorithm, which evaluate the incoming data, analyze the particular situation, and then determine if there is any imminent threat of impacting an object in the frontal area of the vehicle, where many of these algorithms are based on parameters such as "time to impact", "time headway", or perhaps basic vehicle kinematics.

With respect to claims 17- 20 which recite "that the velocity is determined with the aid of a reference velocity", and claims 21-24 which similarly recite "wherein the velocity is determined on the basis of a time characteristic of location information", please see the afore mentioned section of section 0002 in which it clearly teaches that typically a vehicle is configured with a sensor (or sensors) that is capable of detecting objects in the frontal area of the vehicle, and that the sensor not only detects the

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presence of an object but also provides some quantitative information about the object such as range, range rate, and azimuth position of the object. Additionally, information related to the object (e.g., a lead vehicle in many instances) may include relative acceleration, the size of the object, the dimensions of the object, the direction of movement of the object, etc.

With respect to claims 25-30 which recite the use of at least one photonic mixer in a Lidar type environmental sensor system, for haptically outputting information to the driver as a function of object classification, please see sections 0014 and 0015 which clearly disclose object detection in conjunction with threat assessment by determining the location, speed, acceleration, etc. of an object as part of a driver warning system which warns a driver haptically or by a buzzer, warning light or other type of feedback, that there is a likelihood of an impact.

With respect to claims 31 and 32, which now additionally recite the object classification includes a vehicle class and a pedestrian, and that the restraint system is also a controlled as a function of at least one additional crash parameter, please note that Kellum teaches target identification by considering the size (section 0002) location, speed and acceleration of an object (section 0015), whereas Rao et al. ('420) further teaches considering the length and width of the host and target vehicles, where the classification for small objects may include pedestrians and large objects as vehicles.

***Response to Arguments***

5. Applicant's arguments filed 3/27/07, with respect to the rejections under 23 USC 112 and 35 USC 102 have been fully considered and are persuasive in view of Applicant's amendment to independent claim 11.

That being said, Applicant's arguments were for the most part directed to the fact that Kellum only went as far as providing a warning to the driver once it had been determined that the level of threat is above a given threshold.

The above combination of Kellum and Rao et al. ('420) now provides for object detection based on detected velocity and acceleration, but further considers the size or length and width of an object before deciding which countermeasures are to be activated in the event of an imminent collision.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Edward Pipala whose telephone number is 571-272-1360. The examiner can normally be reached on M-F 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ejp



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